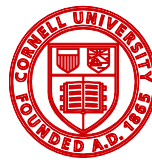
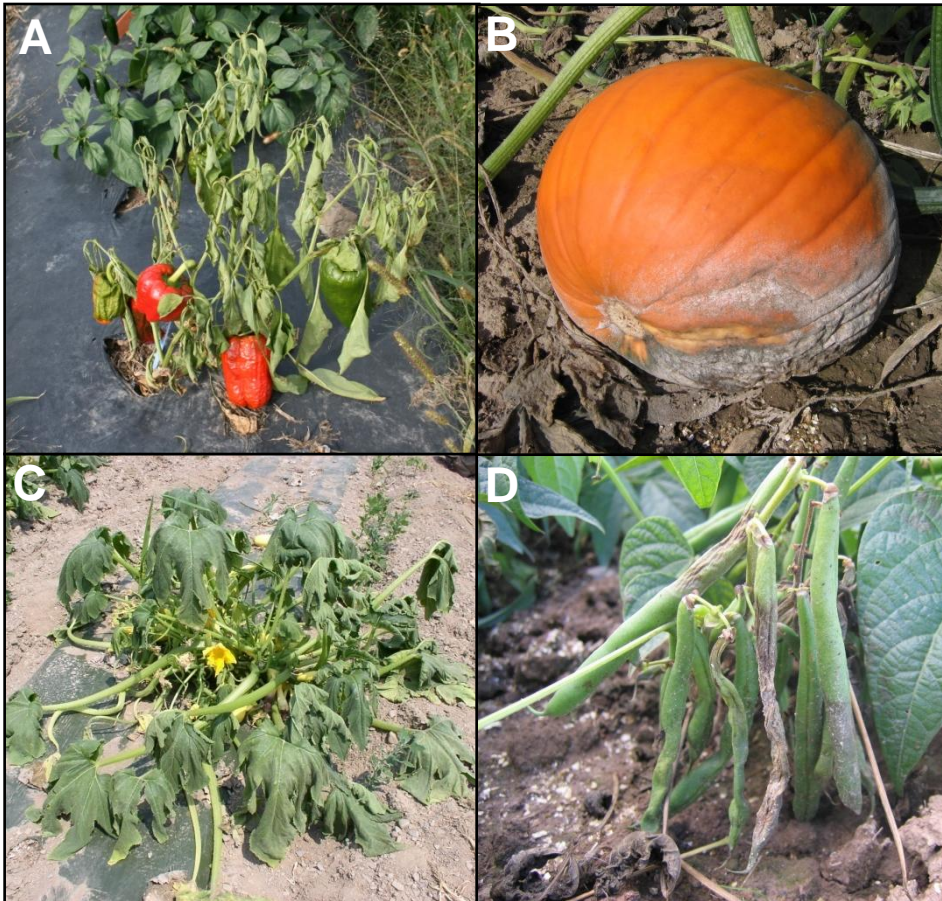


The facts about Phytophthora blight



Cornell University
New York State
Agricultural Experiment Station

Phytophthora blight is caused by the water mold *Phytophthora capsici* and causes fruit rot, rapid wilting, and plant death in many vegetables. For this reason, it is important to know how to keep it off your farm, as well as how to manage the disease once it is on your farm.



Symptoms of *Phytophthora* blight on different hosts; wilt in peppers (A) and squash (C) and fruit rot on pumpkins (B) and beans (D).

How to recognize it

Phytophthora blight often appears first in low or flooded parts of a field as systemic wilting of the plant. It is sometimes accompanied by a shriveling of the crown, and fruits may develop soft spots, then “melt.” When humidity is high, fruits, stems, crowns, or leaves may become covered with what looks like powdered sugar.

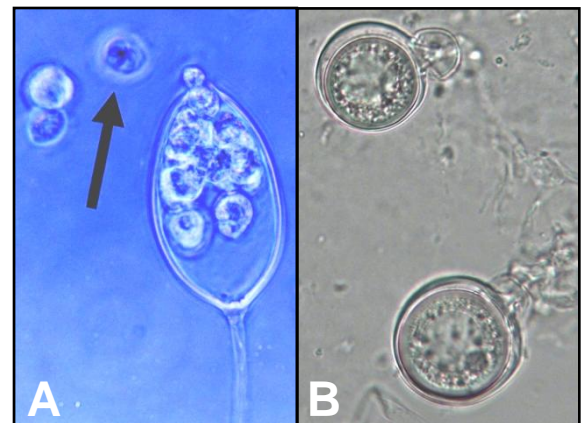
Host range

- All cucurbits (melon, cucumber, pumpkin, squash)
- Solanaceae (bell and hot pepper, tomato, eggplant)
- Legume (snap bean, lima bean)
- Weeds (wild nightshades, purslane, Carolina geranium)

How it kills plants

The “powdered sugar” on infected plants is actually made up of millions of short-lived spores that release smaller swimming spores in water. Neither of these spores can survive New York winters, but both are very important in the spread of *Phytophthora* blight during a growing season.

Long-lived spores of *P. capsici* survive for years in soil and start new disease epidemics each growing season in New York. They can only be produced when the two different mating types of *P. capsici* (called A1 and A2) come in contact with each other. Unfortunately, this is common in New York fields.



Short-lived spore (A; magnified 400 times) releasing swimming spores (indicated by the arrow) and long-lived spores (B; magnified 200 times).

How Phytophthora blight spreads

Fortunately, spores of *P. capsici* cannot be blown between or within fields. Short-lived spores can be moved long distances (more than 200 feet) through standing water in a field caused by heavy rain, poor drainage, or over-irrigation. They can also be splashed to aerial parts of plants or between plants by heavy or wind-blown rain. Essentially, these spores will move wherever water moves, including draining into surface irrigation sources like streams or ponds, from which they can be spread throughout entire fields, or from one farm to another within a watershed. Swimming spores are attracted to plant roots as they move through water.



Phytophthora blight spreads rapidly in water.



Culled fruit may contain long-lived spores.

Long-lived spores in the soil can be moved throughout or between fields when soil clings to tires and tillage equipment. They are also moved long distances in infected plant material, especially cucurbit fruits which may appear healthy at harvest, but rot within several days. Human transport of infected plant material is the most likely cause of the long-distance movement of Phytophthora blight in New York. This means that there are many things we can do to prevent the introduction of this devastating disease into new fields.

What you can do about it

If you don't have Phytophthora blight yet...

- Never dump culled fruit or plants into production fields
- Know where your irrigation water comes from, and use uninfested water
- Obtain compost from a trusted source

If you already have Phytophthora blight ...

- Promote good drainage and do not over-irrigate
- Grow bushing cucurbits, tomatoes, peppers, and eggplants on raised beds
- Plant tolerant sweet pepper varieties
- Rotate (watch your weeds!)
- Dispose of culled fruit or infected plants in a sanitary landfill, or by burying
- Prevent spread around your farm or into irrigation sources
- Rogue infected plants and harvest early from an infected field
- Use chemical fungicides according to the label

For more information, please contact:

Amara Camp – arc55@cornell.edu
Dr. Chris Smart – [cgs14@cornell.edu](mailto:cds14@cornell.edu)
Dr. Helene Dillard – hrd1@cornell.edu
Dr. Steve Reiners – sr43@cornell.edu